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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,315	08/24/2001	Stepan Sokolov	SUN1P843/P6724	2845
22434	7590	08/25/2006	EXAMINER	
BEYER WEAVER & THOMAS, LLP			WOOD, WILLIAM H	
P.O. BOX 70250				
OAKLAND, CA 94612-0250			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/939,315	SOKOLOV, STEPAN	
	Examiner	Art Unit	
	William H. Wood	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 June 2006.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 4,7,8,11-15 and 17-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 4,7,8,11-15 and 17-24 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Claims 4, 7-8, 11-15 and 17-24 are pending and have been examined.

Information Disclosure Statement

The information disclosure statement filed 15 June 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it does not identify any documents for consideration. The 1449 form is missing from the record. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 4, 5, 7, 8, 11-13, 20-22 and 23-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are not described for "determining a string representation of a field associated with said JAVA object by accessing said JAVA object" (see claim 4, for example). The disclosure provides no suggestion of how to accomplish this crucial functionality.

3. Claims 4-5, 7-8, 11-15, 17-22 and 23-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are not enabled for "determining a string representation of a field associated with said JAVA object by accessing said JAVA object" (see claim 4, for example).

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the

claimed invention. A patent need not teach, and preferably omits, what is well known in the art. Thus, the claimed invention must be enabled so that any person skilled in the art can make and use the invention without undue experimentation. The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation.

The experimentation for the present claims is undue:

- The nature of the invention and the breadth of the claims is to an inventive Bytecode instruction, which accomplishes “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”, for a JAVA virtual machine. Therefore, such an instruction’s implementation must be enabled in the disclosure. The disclosure merely states the existence of an instruction and it accomplishes “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”. The disclosure provides no suggestion of how to accomplish this crucial functionality. Essentially, the describing of the inventive feature is left out of the disclosure.
- The state of the prior art, with regard to JAVA virtual machine Bytecode instructions, is the currently existing instruction set. The JAVA virtual machine already possesses a complete set of fully implemented instructions, allowing a typical user to make

use of the JAVA virtual machine immediately. The current claimed invention however, requires the typical user to develop the implementation of the crucial functionality of a new instruction accomplishing “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”. The state of the art is for one of ordinary skill to immediately use the JAVA virtual machine without actually implementing the Bytecode instruction set.

- There are no working examples, suggestions or direction provided as to the implementation of the described claimed invention Bytecode instruction.
- Therefore, the present claimed invention requires undue experimentation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 4-5, 8, 11-12, 14-15, 17-18, 20-21 and 23-24 are rejected under 35 U.S.C. 102(a) as being anticipated by Peter **Haggar**, “Java bytecode: Understanding bytecode makes you a better programmer”.

Claim 4

Haggar disclosed a JAVA virtual machine residing on a computing apparatus and operating in a JAVA computing environment (*page 2, section “The details”, first paragraph*), said JAVA virtual machine capable of executing a Bytecode instruction to determine a string representation associated with a JAVA object, thereby determining said string representation of said JAVA object without invoking a JAVA “*to_string*” method (*page 3, code segment and second paragraph under code segment, “getfield” bytecode*), wherein said virtual machine is capable of performing the following operations when said Bytecode instruction is executed in order to determine said string representation of a said JAVA object:

popping said reference to said JAVA object from an execution stack (*page 3, second paragraph under first code segment/figure, “getfield” bytecode*);

accessing a field of said JAVA object by using said reference to said JAVA object in order to obtain data representing said field (*page 3, second paragraph under code segment, “#5 is used to build and index into … the class”*);

determining a string representation for said field of said JAVA object after said accessing of said field of said JAVA object by using said reference to

said JAVA object stored on said execution stack (*page 3, code segment and second paragraph under code segment, “getfield” bytecode; “Field java.lang.String name”*); and

pushing on said execution stack a reference to said string representation after said determining of said string representation (*page 3, code segment and second paragraph under code segment, “getfield” bytecode*).

Claim 5

Haggar disclosed a JAVA virtual machine as recited in claim 4, wherein said JAVA virtual machine executes a JAVA Bytecode instruction, said JAVA Bytecode instruction operating to determine said string representation associated with said JAVA object (*page 3, code segment and second paragraph under code segment, “getfield” bytecode; “Field java.lang.String name”*); thereby allowing said string representation to be determined without invoking a JAVA method (*page 3, code segment and second paragraph under code segment, “getfield” bytecode*).

Claims 8, 11-12, 14-15, 17-18 and 20-21

The limitations of claims 8, 11-12, 14-15, 17-18 and 20-21 correspond to those found in claims 4 and 5 and as such are rejected in the same manner. Note Aload bytecode instruction found in **Haggar**, page 3, code segment and first paragraph after code segment.

Claim 23

Haggar disclosed a virtual machine as recited in claim 4, wherein said reference to said JAVA object is stored on said execution stack by executing another Bytecode instruction (*page 3, code segment and first paragraph under code segement, “aload_0”*).

Claim 24

Haggar disclosed a virtual machine as recited in claim 23, wherein said other Bytecode instruction is a JAVA Aload bytecode instruction (*page 3, code segment and first paragraph under code segement, “aload_0”*).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7, 13, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter **Haggar**, “Java bytecode: Understanding bytecode makes you a better programmer” in view of **Blandy** et al. (USPN 6,654,778).

Claims 7, 13, 19 and 22

Haggar did not explicitly state a JAVA virtual machine as recited in claim 5, wherein said JAVA virtual machine operates in an embedded system. **Blandy** demonstrated that it was known at the time of invention to implement JAVA virtual machines in embedded systems (column 3, lines 66-67) and further to implement the “getfield” bytecode instruction in such systems (column 5, lines 24-27). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the “getfield” bytecode within an embedded system as found in **Blandy**’s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to make use all potential environments for greatest economic impact and marketability.

Response to Arguments

8. Applicant's arguments filed 15 June 2006 have been fully considered but they are not persuasive. Applicant argues: 1) the limitation “determining a string representation for said field” is enabled by Applicant’s original disclosure; and 2) **Haggar** does not disclose determining a string representation for the fetched field.

First, the rejection of the determining limitation is maintained. Applicant’s originally filed disclosure provides no evidence of Applicant’s intention on how-to or that it was known by others how-to determine a string representation of a field using a JAVA Bytecode. Applicant now contends, “one

of ordinary skill in the art know that an object and/or field of an object can be represented as a string of characters" (Arguments 6/15/06: page 8, third to last sentence of first full paragraph). Not only does this explanation fail to disclose enablement of Applicant's mechanism for determining, it further indicates a key element of Applicant's claimed invention is known to those of ordinary skill in the art. None of Applicant's references to the original disclosure provide any enablement for the claimed limitation. At best these citations merely describe the problem to be solved.

Second, **Haggar** clearly references a field and determines a string representation. Notice the first figure on page 3, the "getfield" instruction references a string field and thus determines "a string representation". Further, under the broadest reasonable interpretation, "determining" and "a string representation" offer little in the way of limitation, especially considering the lack of disclosure. "A string representation" can be any representation of a string including data that must be manipulated later. "Determining" simply means the string representation is in some way identified. Thus, **Haggar** determines a string representation simply by identifying, acquiring and using a string field in some way. In particular, **Haggar** fetches a string and makes it available on the stack (page 3, second paragraph under the code segment).

Having addressed Applicant's raised concerns, the claims are rejected as indicated above.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained form either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR systems, see <http://pair-direct.uspto.gov>. For questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

QWJ

William H. Wood
Patent Examiner
AU 2193
August 21, 2006

Kakali Chaki

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100